

A
V I E W *K*
OF THE
A D V A N T A G E S
OF
INLAND NAVIGATIONS:
WITH A
P L A N
OF A
NAVIGABLE CANAL,
Intended for a
C O M M U N I C A T I O N
Between the PORTS of
LIVERPOOL and *HULL*.

Lo! Princes I behold! contriving still,
And still conducting firm some great design!
See! long canals, and deepen'd rivers join
Each part with each, and with the circling main
The whole enliven'd isle.

THOMSON.

L O N D O N:

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in *Liverpool*. 1765.

INLAND NAVIGABLE

TO THE
RIGHT HONOURABLE,
AND
HONOURABLE,
BOTH HOUSES
OF
PARLIAMENT;

THIS
DESIGN
TO ENHANCE THE VALUE OF LANDS,
AND TO REVIVE AND EXTEND THE
MANUFACTURES AND COMMERCE
OF
GREAT BRITAIN,

IS MOST HUMBLY
DEDICATED.

TO THE
RIGHT HONOURABLE

AND
HONOURABLE

BOTH HOUSES

OF PARLIAMENT;

DEBATES

TO ENLARGE THE KNOWLEDGE OF PARLIAMENT

AND TO REVIVE AND EXTEND THE

MANUFACTURES AND COMMERCE

OF GREAT BRITAIN

IN MOST HUMBLE

DEDICATION

[A]
V I E W
OF THE
A D V A N T A G E S
OF
INLAND NAVIGATIONS, &c.

SECTION I.

General advantages of inland navigations.

WHEN designs of great expence and importance are under consideration, the advantages resulting from them to the public in general, and to those who are more immediately concerned in their success, should be first ascertained; and then impartially balanced against the injuries and inconveniencies, if there be any, affecting the properties and pleasures of individuals.

It is a maxim well established by political enquirers, that the power of nations, other circumstances being alike, is always in proportion to the number of their inhabitants, and the abundance of their wealth.

THOSE nations that remain still in their first state of nature, and subsist alone by
A hunting,

hunting, are of all others the most thinly peopled. Pasturage, by increasing the sustenance of mankind, increases their numbers. Agriculture, for the same reason, still further contributes to render a country populous: and lastly trade, by bartering manufactures for food, the labour of the hand for the fruits of the earth, will to an inconceivable degree, superadd *population* to a well cultivated country. An increase of *opulence*, as well as of *people*, attends an increase of *trade*; as our own, and every other commercial nation evinces; and therefore whatever facilitates our trade, and has a tendency to enlarge it, deserves universal encouragement.

THAT *inland navigations* have a tendency to facilitate and increase the commerce, and consequently to add to the riches and population of a country, will evidently appear from a due attention to the following particulars.

THE first and most obvious effects of *inland navigations*, from whence the more remote advantages chiefly arise, are, that *they greatly diminish the price of carriage, and open easy communications between the distant parts of a country, and from each of those parts to the sea.*

THAT country will always have a superiority in commerce, which can afford to sell its products and manufactures at the lowest price.

price. Those who can lay in their raw-materials, be furnished with plenty of food and fuel, and carry their goods to market, at the least expence, can afford to sell them the lowest; and therefore may always have the preference, where they are not kept out by force: and it is plain that all these consequences do in a great measure depend upon *cheapness of carriage*; raw-materials, and food, and manufactures, being all affected by it.

Inland navigations do not only greatly promote the manufactures where they are already established, for the reasons above mentioned, but occasion the establishment of many new ones, in places where the lands before were of little value, and almost destitute of inhabitants; thus enlivening and enriching every part through which they are extended.

THESE communications by water, also greatly contribute to the benefit of the merchants, who reside at the ports where they terminate; by enabling them to export greater quantities of goods from those parts which lie at a distance from the sea; and to supply a much larger space of country with their returns from abroad.

THE *Aire* and *Calder* navigations in Yorkshire have, within these few years, afforded us very striking instances of the utility of inland navigations, both in the increase of the established manufactures, and in the

production of new ones; as is clearly evinced by the vast increase of tonnage on those rivers. And the astonishing progress of the trade of *Liverpool*, is a strong proof of the advantage of an easy and cheap communication with manufacturing towns: the navigations to *Manchester*, and the *Salt-works* in *Cheshire*, having very considerably contributed to the present flourishing state of this port. In the reign of Queen ELIZABETH, a survey was taken of the shipping belonging to every port in the kingdom, when the largest vessel at *Liverpool* was but of forty tons burthen, and the whole amount but two hundred and twenty three tons. At present there are about four hundred vessels belonging to it; and each vessel, on an average, may be supposed to carry one hundred and fifty tons; so that the quantity of shipping in two centuries, has increased as two hundred and sixty nine to one: nay, we may say it is in less than one century that almost the whole of this increase has taken place; as it is not much above eighty years since the first vessel sailed from *Liverpool* in the american trade.

It is another very great advantage of inland navigations, that they render the keeping of an immense number of *horses*, which are not employed in agriculture, unnecessary; and thereby prevent the destruction of vast quantities of food, which might be exported
to

to foreign markets, or applied to the nourishment of more profitable animals, and the support of numerous useful and industrious families.

THOUGH every great improvement in commerce may seem at first chiefly to affect the mechanic, the manufacturer, or the merchant, yet much of the advantage is ultimately derived to the *landed gentleman*; since they who consume, manufacture, or export the productions of his land, have in many instances above tenfold enhanced its value: and it has been proved, by many able writers, that the national success of commerce more deeply concerns the landed gentleman, than the merchant himself; as the merchant can at any time remove, with his effects, and try his fortune in a more advantageous situation; while the landed gentleman is bound down to the soil, and cannot remove his estate, though the persons are gone who used to consume its produce.

BUT *inland navigations* have a tendency to advance and perpetuate the value of estates near which they pass, by making it the interest of the gentleman, the manufacturer, and the merchant, to dwell together in the same country, and enabling them mutually to supply each others wants. From this connexion, a thousand reciprocal advantages arise, which ought to banish all jealousies,

or apprehensions of contending interests, from the minds of those whose interests are inseparable.

THESE *navigations* are also *directly* advantageous to the *landed gentleman* many ways.

THEY give distant estates the opportunity of an easy and cheap communication with large towns and sea-ports; and hereby enable the proprietors, or farmers, to bring their products to markets from which their remote situations formerly excluded them. In heavy and bulky articles, such as *corn, timber, iron, coals, stone, &c.* this is a circumstance of so much importance, that an unfavourable situation with respect to carriage, does often prevent many of these commodities from being of any value to their owners.

THEY frequently occasion the discovery of *mines*, or useful *minerals*, to the great emolument of proprietors of land, which were never apprehended to be in the places where they are found; and which, but for these public works, would have been for ever buried in the earth.

THEY greatly promote the cultivation of poor and waste lands; either by bringing manure and conveying away the produce at a cheap rate; or by encouraging artists and manufacturers to settle upon their banks, in situations which were before uninhabited and unimproved; and thus give a gentleman

man the unspeakable pleasure of seeing the most unprofitable parts of his estate adorned with pleasant villages, and productive of food, for the support of the industrious inhabitants.

Canals do also, of themselves, directly tend to improve the lands through which they are carried, by taking away the superfluous moisture; and likewise *may be made* to furnish the farmer with the means of watering his meadows in seasons of unusual drought; either by spouts, which may be laid through the banks of the canals, or by large *reservoirs*, made in convenient places for this purpose, like those in *Cbina*; which contribute greatly to the amazing fertility of that Empire: ‡ of these, and the Canals, *Le Compte* speaks in the following manner:
 “ Sometimes they make great basons, pits,
 “ or lakes, from which the neighbouring
 “ lands are watered: so that this *water*,

‡ Quelquefois ils forment de grands bassins, des étangs, des lacs, dont les terres voisines sont arrosées: de sorte que cette *eau* si pure & si abondante, embellie de tant de ponts, resserrée par des levées si propres & si commodes, distribuée également dans de vastes plaines, couverte d’une infinité de bateaux & de barques, & couronnée, si j’ose ainsi parler, d’un prodigieux nombre de villages & de villes, dont elle va remplir les fossés, & former les ruës, fait non seulement le plus fertile, mais encore le plus beau país du monde.

Le Compte, Tom 1. p. 182.

“ which is so fine, and in such great abundance,
 “ dance, embellished with so many bridges,
 “ inclosed with such neat and commodious
 “ banks, distributed equally over vast plains,
 “ covered with an infinite number of boats
 “ and vessels, and crowned, if I may say so,
 “ with multitudes of villages and towns,
 “ whose ditches are filled with it, and whose
 “ streets it forms, makes not only the most
 “ fertile, but also the most beautiful country
 “ in the world.”

Russia, France, Holland, and especially China, furnish ample proofs of the unspeakable advantages of inland navigations. Had it not been for the canal of *Ladoga*, the inhabitants of *Petersburg* might have starved, for want of provisions and commerce: France has doubtless received great benefit from those of *Orleans* and *Briare*, between the countries watered by the *Seine* and the *Loire*: and also from the famous canal of *Languedoc*; which must have been of service to commerce; though it did not answer all the ambitious purposes which its royal owner was led to expect from it. The States of *Holland* owe their very existence, as well as their opulence and power, to their numerous canals: and to the same cause it is in a great measure owing, that *China* is so rich, plentiful, populous, and delightful a country.

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WHILE we are enumerating the general advantages of inland navigations, we must not forget how much they contribute to the stability and perfection of the *public roads*; a subject of great importance, and deserving the attention of every government: and experience has shewn us, in this nation, that neither statute duty, nor turnpikes, with broad wheels and limitation of the number of horses, can effectually keep them in repair, without the assistance of navigable canals; by which great quantities of heavy goods, that do most injury to the roads, will be taken off, and the expence of repairing them so far diminished, that by degrees they may rival those of France, to the great pleasure and advantage of the traveller.

WE may add, that *navigable canals*, in general, give employment to vast numbers of people; and where they go through *corn countries*, and in the neighbourhood of *collieries*, diffuse plenty of *food* universally about them; and furnish *fuel* for the use of the mechanic arts, and the comfort of the poor inhabitants; frequently at half the price they must otherwise have paid for it. Advantages which contribute so much to the ease and enjoyment of life, even in its lowest condition, that the thoughts of having been instrumental in procuring them, must be a constant source of refined satisfaction to every

ry sensible and benevolent mind. The poor of *Manchester*, and its neighbourhood, will acknowledge these benefits, with tears of gratitude in their eyes: and the *pleasure* this must give to the noble author of them, perhaps he himself can better feel than describe. It is the private reward of public virtue and beneficence.

S E C I

SECTION II.

Description of the intended canal, &c.

THE advantages arising from inland navigations to manufactures, commerce, and agriculture, are generally acknowledged and illustrated by those who have written on the commercial interests of nations: and many of our own writers have lamented that, in this respect, we are outdone by the *French*, our chief rivals in trade and manufactures; though the situation of our lands and harbours is much more commodious than theirs for this purpose; as no part of this kingdom, according to the computation of *Dr. Halley*, is more than seventy miles from the shore.

MANY *courses* for *navigable canals* have been pointed out, in our own country, that are very practicable and eligible: the most striking and beneficial of which are, those that would join the *Thames* and the *Severn*, the *Severn* and the *Trent*, the *Trent* and the *Weaver*; and lastly, the *Firth of Forth* with
the

the *Clyde*; as by their means the principal ports of our island would communicate with each other; and the most fertile parts of the country with the metropolis.

THE use of navigable canals, and the facility of carrying them into execution, have long been known and experienced in other countries; but this nation is peculiarly indebted to the *Duke of Bridgwater*, for very great improvements in the construction and management of them; and especially for *ascertaining the expence of compleating these noble works*; on which account this grateful people will never fail to rank him in the number of their illustrious benefactors.

THE present design comprehends only a part of the great one mentioned above. It is to join the river *Trent*, near Wilden in Derbyshire, with the river *Weaver* in Cheshire, or the *Duke of Bridgwater's navigation*, or the *tide-way* in the river *Mersey*, as shall be found most expedient, by a *canal*, with branches to *Birmingham*, *Lichfield*, *Tamworth* and *Newcastle*. And if this work meets with the approbation of the country, and the encouragement of the Legislature, in all probability the other parts of the design will soon be undertaken, to the great advantage both of the commercial and landed interests; and petitions to parliament, for branches out of

of the principal canals, will become as frequent as they now are for turnpike roads.

THE *Canal* now intended to be carried into execution, was first proved to be practicable by the survey of Messrs. *Taylor*s of *Manchester*, and Mr. *Eyes* of *Liverpool*, made in the year 1755, at the expence of the *Liverpool Corporation*; and chiefly promoted by the late Mr. *Hardman*; an active and able friend to the commercial interests of this nation, and one of the representatives of that borough. And the public is indebted to the Earl *Gower*, and the late Lord *Anson*, for another survey of the intended course of this canal, made by Mr. *Brindley* in 1758, and afterwards reviewed by Mr. *Smeaton*, F. R. S. and Mr. *Brindley* jointly; and these surveyors concurred in opinion, that no tract of land in the kingdom was naturally better adapted for the purpose of an inland navigation, than none stood in more need of it, or was so convenient for an union of the east and west seas.

THE reasons for preferring a *canal* to a *river navigation*, are many and important. The shortness of the voyage on the former, which is protracted on the latter by the winding course of the stream; the absence of currents, which in rivers impede the upward navigation more than they assist the downward,

ward,† and hourly undermine and wear away the banks; the security from the mischief and delay occasioned by floods; the easier draught for the horses, as the boats will, in a canal, move nearer the towing path; and the advantage of choosing high ground for the locks, while in the other case, the situation of them must be regulated only by the accidental shallows of the rivers, are all circumstances greatly in favour of canals; and especially the last: for as in *river navigations*, the locks must frequently be erected on low lands, the neighbouring meadows are thereby often rendered damp and swampy; while in *canal navigations* this disadvantage is not only avoided, but as the canal, to pursue its most convenient course, must frequently wind along the edges of the rising ground, numberless springs will be cut through, and the plain beneath rendered actually drier and more fertile. It is also another circumstance not unworthy of notice in favour of *canals*, when compared with *ri-*

† This advantage can hardly any where appear in a more full and striking light, than at *Barton Bridge*, in Lancashire; where one may, at the same time, see seven or eight stout fellows labouring like slaves to drag a boat slowly up the river *Irwell*; and one horse drawing two or three boats at a great rate upon the *Canal*; which is carried over the river at this place, like a magnificent roman aqueduct.

ver navigations, that as the conveyance upon the former is more speedy, and without interruptions, and delays, to which the latter are very liable, opportunities of pilfering earthen wares, and other small goods, and stealing and adulterating wine and spirituous liquors, are thereby in a great measure prevented. The losses, disappointments, and discredit of the *manufacturers*, arising from this cause, are so great, that they frequently choose to send their goods by land at three times the expence of water carriage, and sometimes even refuse to supply their orders at all, rather than run the risque of forfeiting their credit, and submitting to the deductions that are made on this account.

WE may also add, with respect to the *potteries* in Staffordshire, that this evil discourages merchants abroad from dealing in those manufactures, and creates innumerable misunderstandings between them and the manufacturers.

THIS *canal* is designed to fall into the *Trent* at *Wilden* rather than at *Burton*, to avoid the shallows which greatly interrupt the navigation on that river: at *Harecastle*, the highest part in the course of the canal, from whence the water falls north and south, it will pass above a mile under ground; by which

which means fewer locks will be necessary, and more water supplied from the coal mines in that country: and the whole length of it, with the branches, will be upwards of an hundred miles.

THE canal and vessels are to be constructed on the plan found most eligible from various experiments made on the *Duke of Bridgewater's navigation*. From these experiments his excellent engineer, Mr. *Brindley*, hath proposed to compleat this canal as far north as *Harecastle*, purchase the land, erect locks, make towing paths, build bridges, and defray every expence, except that of obtaining the act of parliament, for seven hundred pounds a mile: to cut through *Harecastle* it is supposed will cost ten thousand pounds; and the remainder of the canal one thousand pounds a mile. He proposes to make the new canal twelve feet wide at the bottom; and three feet deep in general; but at the fords only thirty inches; and, in common, to supply it with a quantity of water just sufficient for the navigation, held up by locks, and having no stream, like those in Holland.

THE boats are to be seventy feet in length, six feet wide, to draw near thirty inches water, and to carry twenty tons burthen. They are to be so constructed as to sail with either
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end foremost, by removing the rudder; and to cost about thirty pounds each.

THERE is to be a man and a boy to each boat, which one horse will draw with ease along the canal; but when necessary, will be able to draw three of them.

It is proposed to raise the money by subscription, in lots, or shares, of two hundred pounds each; no person to subscribe more than twenty shares; the *Tonnage* to be fixed by *Act of Parliament*, and vested in the *Subscribers*, as a security for their money; the company to be under the inspection of commissioners, as in most other navigation acts; the shares to be transferable, in an easy manner, like government securities; the navigation to be free and open to all persons, paying the tonnage fixed by law; and land-owners to have liberty to erect warehouses and wharfs, on the banks or sides of the navigation.

It is also proposed to repay the money subscribed for obtaining the *Act of Parliament*, out of the capital stock, if the application to parliament be attended with success.

SECTION III.

Particular advantages of the intended canal.

THE advantages arising from cheapness of carriage, and easiness of communication between the distant parts of a country, and the manufacturing towns and sea-ports reciprocally, are so very extensive and complicated, that it is impossible to reduce them to any very exact estimation. If we would attempt to estimate them at all, it will be necessary to discover, as near as we can, how *much* the price of carriage is likely to be diminished; and what *quantities*, and *kinds* of goods, will probably be conveyed by this navigation.

THE price of land carriage, in the neighbourhood of the canal, is, upon an average, about *nine* shillings a ton, for ten miles. It is supposed the tonnage upon the canal, for the same distance, will be about two shillings, and the freight not above six pence more, making together two shillings and six pence per ton; so that near *three fourths* of the
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present price of carriage will be saved to the public. And the difference between land and water carriage, in other places, confirms the justness of this conclusion. Land carriage, for instance, between Manchester and Liverpool, which are about thirty eight miles distant from each other, costs *forty shillings* per ton; water carriage only *six shillings and eight pence* one way, and *ten shillings* the other; suppose nine shillings upon an average; and the saving, by this navigation, is above *three fourths* of the expence of land carriage.

If we suppose the saving to be only *six shillings* in *nine*, which is a very moderate computation, this circumstance alone, will not only enable land-owners, manufacturers, and merchants, to convey many articles to markets where they never could have born the expence of land carriage; but will also bring into use many natural productions; such as *coals, stone of various kinds, timber, iron ore, alabaster, &c.* which, from their unfavourable situations, never could have been employed.

To give some idea of these advantages, we must endeavour to enumerate the chief sources of employment for the intended navigation: and these may be considered under the three following heads: (1) Natural productions of the countries that lie near the

canal. (2) Cultivated commodities, and manufactures. (3) Imported raw-materials, and general commerce.

FROM *Northwich* to *Lawton* there lies a vast bed of *rock-salt*,[†] about forty yards thick, which, besides being purified and chrySTALLIZED for home consumption and exportation, as will be mentioned in its proper place, might be made great use of in agriculture, and probably in metallurgy, and several of the mechanic arts, if any method could be discovered of granting the liberty of using it, with safety to the revenue.

THERE is a mountain called *Mole-Cop*, near *Lawton*, that contains four different and useful kinds of *Stone*. (1) *Millstones* of an excellent quality, which are now carried by land upwards of an hundred miles, and to all parts of the intended navigation. (2) A good *Limestone*. (3) A fine *Freestone*. (4) *Grinding Stones*, of different sorts.

FROM *Lawton*, almost all the way to *Trentbam*, is a continued chain of *collieries*; and by means of the new canal the consumption of the coals they produce must be greatly increased, to the vast benefit of the

[†] These salt mines were first discovered in the year 1670, by boring for coals, in the liberties of William Marbory, Esq; of Marbory, and lie about thirty four yards from the surface.

proprietors, and of all the places to which they can be carried; there being hardly any circumstance that contributes more to the flourishing state of a manufacturing country, than plenty, and cheapness, of fuel.

NEAR *Wolfeley-bridge*, and also a mile below *Burton*, a *free stone* is found on the banks of the river *Trent*, excellent for its firmness and colour, some parts of which seem not inferior to that of *Portland* or *Roche Abbey*.

A MILE from *Rudgley*, a blazing kind of coal, called *canel*, and other coals are found, belonging to the Earl of *Uxbridge*. The lower stratum of these mines is said to be a valuable one; and it is apprehended a navigable fough might be carried from the new canal into the heart of them, in the manner of the Duke of *Bridgwater's* colliery, in *Lancashire*; and that this would lay them dry; the want of which is the present obstacle to their being worked; and at the same time convey the coals into the new canal; to the great advantage of the noble proprietor, and the neighbouring country.

NEAR that part of the *Trent* where the canal is to terminate, arises a vast mountain of *lime stone*, on which the village of *Breden*, in *Leicestershire*, is situated: at *Tickenball*, in *Derbyshire*, not far from the last mentioned place, there are also quarries of *lime stone*; and

at *Barrow*, in Leicestershire, they burn an excellent kind of lime, for building; which is conveyed to places at a great distance by land, every way: and lime is much wanted through the whole course of the canal, both for the purposes of architecture and cultivation.

A FEW miles lower, at *Clay Hill*, a firm and elegant *alabaster* is found, proper either for stucco or sculpture.

NOT many miles from the *Trent*, near the river *Soar*, in Leicestershire, which it is hoped the gentlemen in that neighbourhood, and the inhabitants of Leicester, will now be able to make navigable, without opposition, are the noted quarries of *Swithland Slate*; a beautiful and durable covering for houses; and prodigious rocks of that kind of grey *porphyry* which is brought from Scotland, to pave the streets of London and Westminster.

A GREAT quantity of *marle* will be thrown out in making the canal; and may besides, in many places, be found so near the banks as to be delivered from the spade into the boats; which will greatly contribute to the improvement of such land as stands in need of this kind of manure. Other manures will also be procured from large towns, on reasonable terms, for back carriage; and as it is intended to exempt *manure* from the charge of
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of tonnage, these advantages, together with the lime, mentioned before, will double the produce and value of many farms bordering upon the canal.

SEVERAL parts of the country, in the neighbourhood of the *canal*, yield great quantities of that sort of *iron ore* commonly called *iron stone*, proper for making cold-short iron; and which, when mixed with the red ore from Cumberland, makes the best kind of tough, or merchant iron. The iron stone of this country is likewise so necessary for working the ore in the north, that even the great expence of land carriage hath not prevented large quantities of it from being conveyed that way to the river Weaver, to be shipp'd for Cumberland; and the ore from the north has been brought into this country under the like inconveniencies. It seems, therefore, highly probable, that the intended canal will occasion the sending much greater quantities of iron stone into the north; and the receiving more red mine back in return; and thereby greatly increase the intercourse between these two parts of the kingdom, to their mutual advantage.

NOT only these natural productions, that are to be found on the banks of the intended canal, but many of those from the more distant parts of the counties it is to pass through, will have their value and consump-

tion greatly increased, by this easy and cheap conveyance. Of this number are *lead, copper, calamine, marble, rottenstone, raddle, white clay, ochres, &c.* and many other articles will probably become useful to society, which at present lie unmolested in their native beds.

FROM natural productions we may proceed to the consideration of those that are cultivated and manufactured: and that which deserves our first attention, under this head, is *corn*; as the growth and exportation of this important article will be greatly increased by a new navigation: and the benefit to the public from the exportation of corn does not arise, as in other merchandise, only from the employment of our hands at home, the improvement of our estates, and the return of wealth, for which it is exchanged abroad; but likewise from its being an infallible security against those dreadful *famines*, formerly experienced in this nation, in years of uncommon scarcity.

In the year 1751, an account of the exportation of grain was laid before the House of Commons; and it appeared, that above five millions of quarters of grain were exported from Great Britain in the years 1746, to 1750, both inclusive; and near seven millions and a half of money gained by the nation in exchange. And since grain has been made an object of foreign commerce, its price
has

has not only in general been lower at home, but its cultivation has increased to such a degree, that a good harvest is supposed to be a provision for four§ or five years.

THE kingdom of England alone, according to Dr. *Halley's* computation, contains about forty millions of square acres; and of these, in the year 1689, when a bounty was first given on the exportation of corn, one third part was supposed to lie in uncultivated commons. No year has elapsed, since that time, in which the Legislature have not passed many acts for the inclosure of waste grounds; whereby the country, in various places, is converted from barren heaths into fruitful fields; yielding riches and support to the industrious farmer, and his useful dependants.

Agriculture, is an inexhaustible source of plenty and riches, which can never be so much enlarged, or its streams so widely diffused, as by the means of *inland navigations*: and as the inhabitants in some places, near the intended *canal*, consume much more corn, and grain of all kinds, than they can raise; and those in others raise more than they can consume; this circumstance will find great employment for the navigation, to the general advantage of the adjacent counties.

§ Sir *John Nichols* says *five* years; the *Corn-Factors* in *London* say, not much above *two*; but probably they do not make a sufficient allowance for exportation, and the distillery.

THE farmers, in the neighbourhood of the new *canal*, may indeed object, that the price of grain will never rise so *high* as it has done in times of scarcity, when there is the opportunity of an easy *importation*. In answer to which, it may be observed, that from the ease of *exportation*, it will never sink so *low* in plentiful seasons; so that the profits of the farmers, upon the whole, will not be less, but more equal: and we cannot help observing, in this place, that *inequality* of gain is, of all others, the most frequent cause of their ruin; as in scarce times, when their profits are great, they become more expensive and luxurious, and do not so well know how to contract their manner of life, when cheaper seasons lower the value of their commodities.

IN times of plenty, the land-owners and farmers near the canal, will receive great benefit from the exportation of their grain, of all kinds: in times of scarcity, the whole country will be relieved, by means of a seasonable importation; and thus the blessings of providence be more equally and uniformly distributed; and an artificial dearth rendered almost impossible. How ineffectual would be the attempt of the most powerful *monopolizer*, in such a country as *China*; where plenty can be thrown into any market, from all parts, by means of navigable canals?

ANOTHER

ANOTHER cultivated article, of great importance, is that of *timber* of all kinds, and especially *oak*; of which there are many large *woods* near the course of the intended canal, that for want of a proper conveyance to seaport towns, where timber is much wanted for ship-building, are sold in the neighbourhood at a low price. Any method of conveying so bulky an article as this to the places of consumption, at an easy expence, will greatly encourage the growth of it, and help to repair that decrease* of ship-timber in this nation, which is a very alarming circumstance, to a people whose riches and power depend so greatly upon navigation.

Cordwood, to make charcoal for the iron works, *oak bark* for the tanners; and *wood*, *madder*, and other articles which may become the objects of cultivation, will be carried at a cheap rate upon the canal, to the mutual advantage of the proprietors and consumers. *Wool*, *hides*, *tallow*, and *provisions* of various kinds, will become more beneficial to their owners, by the advantage of an easy conveyance, to places where they may be consumed or manufactured.

As this *canal* will go through the middle of *Cheshire*, so famous for the great quanti-

* For a very interesting view of the proportionate decrease of *oak timber*, see Mr. Fisher's *HEART OF OAK*, page 72.

ties of good *cheese* it produces, the advantages arising from it to the dairies will be very considerable; as many hundred tons of this article are annually carried, by land, above forty miles to *Willington*, in *Derbyshire*, to be shipped for *London*, and other distant markets, which will for the future be sent by water, all the way to *Hull* and *Liverpool*, at a very moderate expence.

FROM the *Wiches*, in *Cheshire*, manufactured salt is carried, on horseback, to almost all parts of *Staffordshire*, *Derbyshire*, *Leicestershire*, *Nottinghamshire*, *Yorkshire*, and *Lincolnshire*; to which places it will gain a much cheaper access, by means of the intended navigation: and so great is the home consumption of this article, that from the salt works at *Northwich* only, a duty of 67,000*l.* was last year paid into the Exchequer. At *Northwich* and *Winsford* are annually made about 24,000 tons.

THE villages of *Burslem*, *Stoke*, *Hanley-green*, *Lane-delf*, and *Lane-end*, are employed in the manufacturing of various kinds of *stone* and *earthen wares*, which are carried, at a great expence, to all parts of the kingdom, and exported to our islands and colonies in America, and to almost every part of Europe: but the ware which is sent to *Hull* is now carried by land upwards of thirty miles, to *Willington*; and that for *Liverpool* twenty miles,

miles, to *Winsford*. The burthen of so expensive a land carriage to *Winsford* and *Willington*, and the uncertainty of the navigations from those places to *Frodsham*, in *Cheshire*, and *Wilden*, in *Derbyshire*, occasioned by the floods in winter, and the numerous shallows in summer, are more than these low priced manufactures can bear; and without some such relief as this under consideration, must concur, with their new established competitors in France, and our american colonies, to bring these potteries to a speedy decay and ruin.

ALL the branches of the metallic trades, which are almost innumerable, and carried to an astonishing extent at *Birmingham*, *Walsal*, *Wolverhampton*, and other places in the neighbourhood of the intended navigation, must receive advantages from it, that cannot at present be estimated or conceived.

WE have already mentioned the important circumstance of bringing *ores* out of the north, to mix with those in *Staffordshire*; by which the *iron* of that country must be rendered better and cheaper; and to this we may add the great advantage of having *charcoal*, *lime*, and other fluxes, brought to the furnaces at a small expence: and likewise the great saving there may be in conveying this heavy article from the *forge* to the *manufacturer* by water; all which circumstances must contribute

bute to increase the consumption of english iron, and enable the iron masters, in that neighbourhood, to come upon a competition with foreigners, so far as to reduce the price of foreign iron, and upon the whole greatly to benefit both themselves and the manufacturers: and certainly the first *object*, in the encouragement of any manufactory, is to furnish it with its raw-materials at the lowest price; to which nothing, in general, contributes so much as inland navigations.

By the means of this *canal* then, the iron masters will be enabled to serve the manufacturers better with their materials; and by the same means, the manufacturers will be enabled to send their finished goods away much cheaper, and to more markets; by which the consumption, and exportation of them, cannot fail to be greatly increased.

THE circumstance of a water conveyance, all the way from *Birmingham*, to the ports of *Hull* and *Liverpool*, will be a very great reciprocal advantage to all the *three places*. The reduction of the price of carriage, which will take place between *Birmingham* and the last mentioned port, is so great a proportion of the value of *guns*, *nails*, and other heavy manufactures of iron, that the exportation of them from thence must be increased to a degree beyond estimation.

THE *fine ale*, made at *Burton upon Trent*, which is now exported to Germany, and several parts of the Baltic, may, by means of the intended *canal*, be exported from *Liverpool* to all parts of America; where it is likely to become a very considerable article of commerce.

THE valuable manufactures of *Nottingham*, *Leicester*, and *Derby*, will find a cheap conveyance to *Liverpool*, by this navigation; and the demand for them, at that port, will consequently be increased.

IN the neighbourhood of *Burslem*, and the potteries, *bricks* and *tyles* are made of a blue colour, which are so far vitrified, as to be harder, and more durable, than any kind of stone used in building; and these articles are likely to find a demand through the whole course of the canal.

HAVING mentioned the principal *natural productions*, *cultivated commodities*, and *manufactures*, in the neighbourhood of the intended navigation, we come to the *articles of importation*, and of *general commerce*.

GREAT quantities of *flint stones*, used at the potteries in Staffordshire, are brought by sea, from different parts of the coast, to *Liverpool* and *Hull*. And the *clay*, used in the white and coloured ware, is brought from *Devonshire*, chiefly to *Liverpool*; and
from

from thence sent up the river *Weaver* to *Winsford* in Cheshire: the flints from *Hull* are sent up the *Trent* to *Willington* in Derbyshire; and from *Winsford* and *Willington* they are both brought to the works at a very great expence by land carriage; the one being *twenty*, and the other not less than *thirty eight* miles distant from the potteries: and they are likewise subject to the same expences and delays, from floods and shallows, as the manufactured goods, mentioned before, to the very great disadvantage of the manufacturers. Inconveniencies, which nothing but a navigable canal can remove.

THE *iron ore* from Cumberland, as it will be a considerable article of importation, must be mentioned in this place, though, in another view, it has been taken notice of before.

Hemp, flax, and linen yarn, will be conveyed by this canal, to various manufacturers who make use of those materials; and probably occasion the establishment of several new manufactories.

Deals for building, and *Mahogany* for cabinet-work, which are much wanted, and are now very dear, in many parts of those counties through which the canal is to pass, owing to the heavy charge of land carriage upon such bulky commodities, will be conveyed through the whole extent of this navigation

vigation, at a moderate expence, and become very considerable articles of commerce.

American iron will also, by this means, be brought cheaper to the manufacturing towns, from the ports of *Liverpool* and *Hull*; and contribute, with the advantages already mentioned, arising to the *iron-masters*, to lessen the consumption of foreign european iron, to the great profit of this nation, in general, and our own iron-works, in particular; and have a tendency to keep that money at home, which, for want of a better system of commercial policy, is now sent to foreigners, who take very few of our manufactures; and also to prevent the destruction § of a trade, on which many thousands of industrious workmen depend for subsistence.

§ It may deserve the consideration of those who are immediately interested in the subject, whether a *bounty* on american *pig iron* would not be the most *effectual* support of this valuable branch of business? Would it not induce the Americans to turn their attention from *bar iron* to the making of *pig iron*? Would it not contribute to *clear* the lands in America; and to *preserve* the woods in England? Might not our furnaces be turned into forges? And is it not agreeable to sound policy, to encourage our colonies, in supplying us with raw-materials, as near as possible to their *first state*?—If this regulation should take place, as it probably may, then, the gentlemen in the iron trade will want no arguments to convince them, that their business must have a very essential dependance on inland navigations.

THE numerous manufacturers in *Birmingham*, and its neighbourhood, will, in general, receive their raw-materials, of all kinds, much cheaper, by means of the intended canal; such as *copper*, *calamine*, *lead*, *zinc*, *ivory*, and many others.

THE merchants of *Liverpool* and *Hull* will supply the towns and villages, bordering upon the canal, with *rum*, *wine*, *tobacco*, *sugar*, and all kinds of *groceries* and *dying-stuffs*, at lower prices than they have been accustomed to receive these commodities; and with much more safety and expedition. And, as these are articles of general consumption, the amount of them must be very considerable; and the benefit to the public, proportionably great.

THE *salt-trade* will receive a very important advantage from the canal, when the navigation in the *Weaver* may, at any time, be interrupted; as that article may occasionally be forwarded to *Liverpool*, by this new conveyance, for the dispatch of those vessels which would otherwise be detained there, at a great expence. And any injury the proprietors of the *Weaver* navigation have to apprehend from it, supposing the canal should not terminate in that river, must weigh light in the balance of *public utility*; as their freight depends chiefly upon *salt*, and *salt-rock*, from *Winsford* and *Northwich*; which, at present,
amount

amount to about 50,000 tons a year; and will no doubt be still increased: and none of this is likely to come upon the new canal, but when floods, or the repairing of locks, obstruct the Weaver; because the canal will be some miles distant from Winsford; and though it should come near the works at Northwich, the disadvantage of unloading, and loading again, as the canal vessels cannot live in the tide-way, will prevent the *salt* from being sent by them, except upon such occasions as those that are mentioned above.

THE diminution of the price of carriage, which will take place, by means of the canal, must also appear to be a very great and necessary advantage to our manufactures and commerce; when our present price of land-carriage is placed in a comparative view with that of our chief competitors: the price of land-carriage between *Birmingham* and *London* being about *eight shillings* per ton, for ten miles; and in the neighbourhood of the intended canal, and in many other places, no less than *nine shillings* per ton; whilst merchandise may be conveyed, by land, between *Lions* and *Marseilles*, in France, at the rate of *five shillings** per ton, for the same distance. A circumstance that must give the

* *TUCKER'S Essay on Trade*, 3d Edition, page 64.

manufactures of that nation, a very great superiority over ours, at all markets, where they would otherwise meet upon equal terms.

HAVING considered the principal *advantages* which the public may reasonably expect from the execution of this design, we ought not to forget the *pleasures* that may arise from it to individuals; especially as *taste* is so universally cultivated, that our farms are gradually improving into gardens. And here it must be allowed, that to have a lawn terminated by *water*, with moving objects, passing and repassing upon it, is a finishing, of all others, the most desirable. And if we add the amusements of a *gondola*, that may convey us to many flourishing towns, through the most delightful vallies in the kingdom; and the convenience of having variety of fish, brought alive in well-boats, for our tables; we have articles of luxury, which the inhabitants, in other situations, wish for in vain.

So many, and important, are the advantages that will undoubtedly arise to the public from the intended *canal*, that, we presume, an attentive consideration of them, must convince every one, that they infinitely outweigh all the inconveniencies that can be supposed to attend it: and it is to be hoped, every friend to his country will be cautious of giving weight to trivial inconveniencies, in opposition

position to a work of this immense importance; especially at a time when our manufacturers are suffering, for want of the usual demand for their goods; and when several rival nations, as well as our own colonies, are availing themselves of this opportunity, to seduce our workmen, in many branches, to leave the country, and contribute to the support of these alarming competitors.

SOME of the objections, that may be urged against this navigation, have already been obviated; and those that remain, do not seem to be well founded, or of great importance. It may be said, that many estates will be divided by the canal: but, as in several parts, it will be carried through uncultivated commons, and lands that want draining; as a full compensation will be paid for the ground that is cut through; and as the farms will be again connected, by bridges and fords, at suitable distances; it is presumed no inconveniences will proceed from this circumstance, which are not amply counterbalanced by the many advantages, that have been before pointed out, and must evidently arise to every farm through which it may pass.

NOR must we here omit the the trite objection of the *dishonesty* of *watermen*, that they will pilfer fruit and poultry in their passage. But, certainly, this class of travellers may be ranked, in point of honesty, with

with the common carriers; and as one man and a boy, will be sufficient to attend the conveyance of twenty tons of goods along the canal, which by land would require the attendance of ten persons, the number of these dangerous visitors will be greatly decreased.

THE only remaining objection, that has occurred to us, is, that by an inland navigation, between the ports of *Liverpool* and *Hull*, the *coasting trade*, that great nursery for seamen, will be diminished. To which it may be answered, that, in the first place, there is little or none of that trade between those two ports. Secondly, that as this inland navigation will give an opportunity for a more easy conveyance of the *products* of the interior parts of the country, to the neighbouring ports, which may from thence be conveyed, by sea, to distant parts of the kingdom, from whence other products, and commodities, may be returned; the coasting trade must hereby be greatly promoted. And lastly, as this navigation will contribute to increase the produce of our farms, will benefit our present manufactures, and occasion the establishment of new ones, it must, of course, enlarge the amount of our exports; and, instead of lessening, have a direct tendency to augment the quantity of our shipping, and the number of our seamen.

It

It must also be observed, that when the other parts of this GREAT DESIGN are executed; and the *principal ports* and *manufacturing towns* of the kingdom, come to have a reciprocal inland communication, by *water*; then, though the *coasting trade* may be diminished, the *export trade* will not only be inconceivably enlarged, but the internal national commerce be carried on with much more ease and dispatch; less exposed to expensive and hazardous delays; and perfectly secure, in time of war, from the depredations of an enemy.

How far these favourable circumstances must contribute to enhance the value of our lands; to promote the wealth, strength, and splendour of this nation; and to confirm, and perpetuate, the peculiar blessings and privileges of its inhabitants; is referred to the imagination of every intelligent reader.—The *prospect* is delightful!—Patriot minds will dwell upon it with pleasure; and be employed in projecting schemes to realize it, in its whole extent.—But our present attention must be confined to *one part* of the GENERAL DESIGN: and, no doubt, many advantages to be expected from the navigable *canal*, now under consideration, will occur to the reader, that have escaped our notice: those that have been pointed out are, however, very numerous and extensive.

To

To have the means of conveyance so greatly facilitated; the price of carriage so much diminished; old manufactures encouraged; new ones established; estates greatly improved; plenty widely diffused; and the country, in general, rendered still more affluent, populous, and secure; are considerations of such weight, as cannot fail to interest all benevolent and public-spirited persons, in the success of this IMPORTANT UNDERTAKING.

F I N I S.



